

Science and Ecosystem Support Division **Enforcement and Investigations Branch** 980 College Station Road Athens, Georgia 30605-2720

May 31, 2013

4SESD-EIB

MEMORANDUM

SUBJECT: Sampling Investigation Report for Hollingsworth Solderless Terminal Company

700 NW 57th Place Fort Lauderdale, FL

SESD Project # 13-0281

Jairo Castillo, PE, Environmental Engineer Enforcement Section

Mike Bowden, Chief Enforcement Section FROM:

THRU:

Enforcement Section

TO: Galo Jackson, RPM

Superfund Division

Attached is the Sampling Investigation Report for the Hollingsworth Solderless Terminal Company that was conducted on April 2, 2013 in Fort Lauderdale, FL. Should you have any questions or comments please call us at (706) 355-8621, or email me at castillo.jairo@epa.gov.

Attachment

United States Environmental Protection Agency Region 4

Science and Ecosystem Support Division 980 College Station Road Athens, Georgia 30605-2720



Sampling Investigation Report Hollingsworth Solderless Terminal Company

SESD Project Identification Number: 13-0281

Conducted at 700 NW 57th Place (Industrial Complex) Ft. Lauderdale, Florida

Investigation Conducted on April 2, 2013

Requestor: Galo Jackson, RPM Region 4 Superfund Division 61 Forsyth St. SW Atlanta, GA 30303-8960 SESD Project Leader: Jairo Castillo, PE Enforcement Section 980 College Station Road Athens, Georgia 30605-2720

SESD Project ID Number: 13-0281

Title and Approval Sheet

Title: Hollingsworth Solderless Terminal Company Sampling Investigation Report Fort Lauderdale, Florida

Approving Official:

Mike Bowden, Chief Enforcement Section

Enforcement Investigations Branch

5/31/13 Date

SESD Project Leader:

Jairo Castillo, PE Enforcement Section

Enforcement Investigations Branch

5-31-2013

Date

SAMPLING INVESTIGATION REPORT HOLLINGSWORTH SOLDERLESS TERMINAL COMPANY SESD PROJECT NO. 13-0281 APRIL 2, 2013

BACKGROUND

On April 2, 2013 representatives of the US EPA Region 4 Science and Ecosystem Support Division (SESD) conducted a sampling investigation at the Hollingsworth Solderless Terminal site in Ft. Lauderdale, Florida. The investigation was requested by Galo Jackson, Remedial Project Manager, Region 4 Superfund Division. The following personnel participated in the sampling investigation:

PERSONNEL	<u>ORGANIZATION</u>	RESPONSIBILITY
Jairo Castillo	SESD	Project Leader/Safety
		Officer
Donald Fortson	ESAT	Sampling, Custody

The Hollingsworth Solderless Terminal Company (HSTC) site is located on 3.5 acres in an industrial/residential area of Ft. Lauderdale, Florida. The site is occupied by two buildings separated by NW 57th Place. The plant operated from 1968 to 1982 as a solderless terminal manufacturing facility. The manufacturing process included the use of molten salt baths, degreasing parts and electroplating. The wash and process waters, which contained high concentrations of trichloroethylene (TCE) and heavy metals, were disposed in numerous on-site drainfields, by surface discharges, and in a 100-foot-deep injection well located on site.

An In-situ Enhanced Bioremediation (ISEB) treatability pilot study was conducted from April 2005 to September 2007. The results of the ISEB pilot study suggested that this method would be an alternative to reduce the amount of remaining volatile organic compound (VOC) concentrations in groundwater to levels that are protective of human health and the environment within a reasonable timeframe. Nineteen wells were sampled in November 2010 by SESD personnel to provide data to determine if additional substrate was needed to reduce the VOC concentrations below the required levels. The Remediation Target Levels are provided in **Table 1**.

The results of the November 2010 showed three wells (PMW-1, PMW-3, and RW-2) were very close to the remediation goals. The RPM requested that these three wells be resampled and analyzed for VOCs in January 2012 by SESD personnel. Analytical data showed that trichloroethylene (TCE) and cis-1,2-dichloroethylene (DCE) were below the target levels in all three samples. Vinyl chloride (VC) was detected in concentrations greater than the Maximum Contaminant Level (MCL) and Clean Up Goal, but less than Florida Natural Attenuation Default Criteria (FL NADC) for all three samples. The RPM requested the sampling of wells PMW-1, PMW-3, RW-2, plus the addition of RW-1, to be analyzed for TCE, DCE, and VC to assess the current level of contaminants.

The results will be discussed in this report and will be compared to the target levels provided in **Table 2**.

SESD Project ID Number: 13-0281 Page 3 of 8

Table 1: Remediation Target Levels

Groundwater COC	MCL (ug/L)	Clean Up Goal (ug/L)	FL NADC (ug/L)
Trichloroethylene (TCE)	5.0	3.0	300
cis-1,2-Dichloroethylene (DCE)	70	70	700
Vinyl Chloride (VC)	2.0	1.0	100

SUMMARY

Table 2 shows the analytical results for volatile organic compounds. TCE was not detected and DCE concentrations were below target levels in all four samples (PMW-1, PMW-3, RW-1, and RW-2). Vinyl chloride was detected below MCL and FL NADC target levels but above its Clean Up Goal level in sample RW-1. For samples PMW-1, PMW-3, and RW-2, vinyl chloride was detected in concentrations greater than the MCL of 2.0 ug/L and Clean Up Goal target level of 1.0 ug/L, but less than the FL NADC of 100 ug/L. Vinyl chloride was detected in sample PMW-1 at 6.8 ug/L, in sample PMW-3 at 4.5 ug/L and sample RW-2 at 48 ug/L. Also, sample RW-1 contained 1.3 ug/L of vinyl chloride which is above the Clean Up Goal target level.

Table 3 lists the field parameter data for each well sampled along with the data from January 2012. Some of the field parameters from the April 2013 sampling event differed from the January 2012 sampling event. PMW-1 and PMW-3 wells conductivity and turbidity field parameters were consistent between the two events, but pH measurements were higher than the previous event. RW-2 pH field parameters were consistent between the two events, but the conductivity was lower and turbidity was higher compared to the previous sampling event. **Table 2** contains the analytical results compared to the aforementioned target levels. All analytical data sheets from the SESD laboratory are attached as **Appendix A**. Field Logbooks are attached as **Appendix B**.

Table 2: Volatile Organic Compound Analytical Results

Station ID		PMW-1	PMW-3	RW-1	RW-2	RW-2			
Sample ID		PMW1-	PMW3-	RW1-0413	RW2-0413	RW2D-			
		0413	0413			0413			
Sample Date	:	04/02/2013	04/02/2013	04/02/2013	04/02/2013	04/02/2013			
Sample Time	•	14:15	12:15	15:01	10:51	10:51			
Analyte	Units						MCL	Clean	FL
							(ug/L)	Up	NADC
								Goal	(ug/L)
								(ug/L)	
cis-1,2-	ug/L	7.2	2.7	1.0	14	15	70	70	700
Dichloroethylene									
(DCE)									
Trichloroethylene	ug/L	0.50 U	0.50 U	0.50 U	0.50U	0.50U	5.0	3.0	300
(TCE)									
Vinyl Chloride	ug/L	6.8	4.5	1.3	48	50	2.0	1.0	100
(VC)									

U the analyte was not detected at or above the reporting limit.

Table 3: Field Parameter Data

MW ID	TD BLS (ft)	Water Level (ft)	pН	Spec Cond	Temp °C	Turbidity NTU	Comments
RW-1 (04/2013)	-	3.6	6.88	383	29.0	25.2	3.0 gallons purged
RW-1 (01/2012)	•	-		-		-	Not Sampled
RW-2 (04/2013)	36	3.18	6.77	267	28.5	28.5	4.55 gallons purged
RW-2 (01/2012)	36	2.90	6.96	413	28.6	3.10	3 gallons purged
PMW-1 (04/2013)	30	4.02	5.84	254	29.0	55.3	3.75 gallons purged
PMW-1 (01/2012)	30	3.72	3.72	300	29.5	61.2	3.25 gallons purged
PMW-3 (04/2013)	30	4.01	6.07	250	28.7	50.7	2.75 gallons purged
PMW-3 (01/2012)	30	3.70	3.70	272	28.9	64.4	3.5 gallons purged

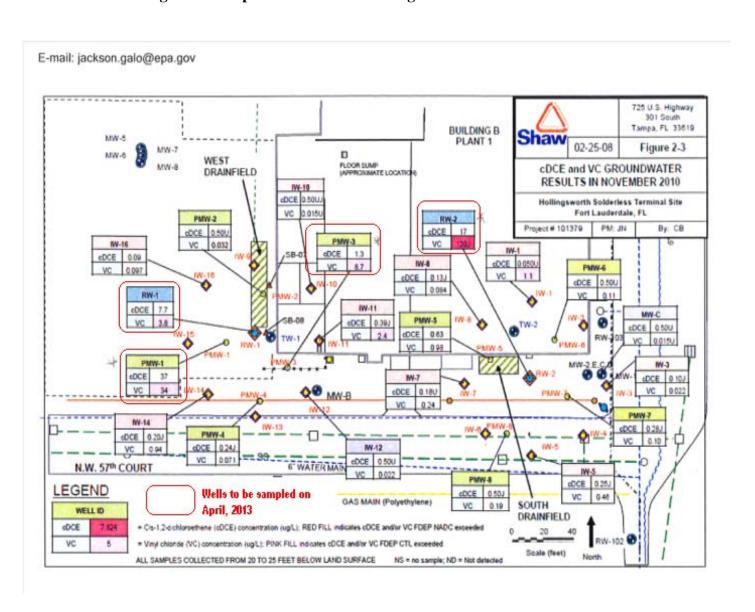
INVESTIGATION DETAILS

The wells were sampled using a low flow purging technique (purging at a rate equal to or less than the recharge rate of the aquifer for the particular well). The sample tubing was placed at 20' below the top of the casing just as it was for the sampling events in September 2006, May 2010, November 2010, and January 2012.

The samples were collected in un-preserved 40 ml vials due to a history of effervescence when the groundwater came in contact with the hydrochloric acid preservative. The samples were analyzed for TCE, DCE, and vinyl chloride. See **Figure 1** for the wells locations and site map which was generated by Shaw Environmental.

SESD Project ID Number: 13-0281 Page 5 of 8

Figure 1: Samples Locations on Hollingsworth Solderless Terminal Site



METHODOLOGY

Field activities were conducted in accordance with SESD's Management and Quality Systems Procedures and the following field measurement and sampling procedures:

Field pH Measurement	SESDPROC-100-R3
Field Specific Conductance	SESDPROC-101-R5
Field Temperature Measurement	SESDPROC-102-R3
Field Turbidity Measurement	SESDPROC-103-R3
Groundwater Level and Well Depth	SESDPROC-105-R2
Pump Operation	SESDPROC-203-R2
Field Equipment Cleaning and Decon	SESDPROC-205-R2
Groundwater Sampling	SESDPROC-301-R2

All field measurements and sampling procedures were performed by SESD's Enforcement and Investigations Branch personnel. Chain of Custody documentation was prepared by Donald Fortson and reviewed and signed by Jairo Castillo.

Samples were analyzed at the SESD laboratory in accordance with the Analytical Support Branch (ASB) <u>Laboratory Operations and Quality Assurance Manual</u>, February, 2013 Version. The ASB laboratory is accredited by the ANSI-ASQ National Accreditation Board/ACLASS for ISO/IEC 17025. EPA analytical method 8260C Volatile Organics was used for the analysis.

FIELD QUALITY CONTROL

One duplicate groundwater sample was collected and analyzed. The analytical results for sample RW2-0413 and its duplicate are provided in **Table 2**. The results correlate very well which indicates proper sampling, handling, and analytical techniques.

A trip blank for volatile organics, TB01-0413, was prepared by the SESD laboratory to accompany the samples from the field to the laboratory. The trip blank contained no analytes at or above the reporting limit.

CONCLUSION

The analytical results from this sampling event will be reviewed by the EPA Remedial Project Manager to determine the next course of action for the site.

SESD Project ID Number: 13-0281 Page 7 of 8

Appendix A Analytical Data Sheets

Analytical Parameters	<u>Matrix</u>	Method	<u>Pages</u>	
Volatile Organics	Groundwater	EPA 8260C	12	

Appendix B Copy of Field Logbook

Logbook 1 of 1



Region 4 Science and Ecosystem Support Division 980 College Station Road, Athens, Georgia 30605-2700 D.A.R.T. Id: 13-0281

Project: 13-0281, Hollingsworth Solderless - Reported by Kristin Trapp

April 12, 2013

4SESD-ASB

MEMORANDUM

SUBJECT: FINAL Analytical Report

Project: 13-0281, Hollingsworth Solderless

Superfund Remedial

FROM: Kristin Trapp

OCS Chemist

THRU: Sallie Hale, Chief

ASB Organic Chemistry Section

TO: Jairo Castillo

Attached are the final results for the analytical groups listed below. These analyses were performed in accordance with the Analytical Support Branch's (ASB) Laboratory Operations and Quality Assurance Manual (ASB LOQAM) found at www.epa.gov/region4/sesd/asbsop. Any unique project data quality objectives specified in writing by the data requestor have also been incorporated into the data unless otherwise noted in the Report Narrative. Chemistry data have been verified based on the ASB LOQAM specifications and have been qualified by this laboratory if the applicable quality control criteria were not met. Verification is defined in Section 5.2 of the ASB LOQAM. For a listing of specific data qualifiers and explanations, please refer to the Data Qualifier Definitions included in this report. The reported results are accurate within the limits of the method(s) and are representative only of the samples as received by the laboratory.

Analyses Included in this report:	Method Used:	Accreditations:		
Volatile Organics (VOA)				
Volatile organic compounds	EPA 8260C (Water)	ISO		

Page 1 of 12 E131405 VOA FINAL 04 12 13 0915 4/12/13 9:15



Region 4 Science and Ecosystem Support Division 980 College Station Road, Athens, Georgia 30605-2700 D.A.R.T. Id: 13-0281

Project: 13-0281, Hollingsworth Solderless - Reported by Kristin Trapp

Sample Disposal Policy

Because of the laboratory's limited space for long term sample storage, our policy is to dispose of samples on a periodic schedule. Please note that within 60 days of this memo, the original samples and all sample extracts and/or sample digestates will be disposed of in accordance with applicable regulations. The 60-day sample disposal policy does not apply to criminal samples which are held until the laboratory is notified by the criminal investigators that case development and litigation are complete.

These samples may be held in the laboratory's custody for a longer period of time if you have a special project need. If you wish for the laboratory to hold samples beyond the 60-day period, please contact our Sample Control Coordinator, Debbie Colquitt, by e-mail at Colquitt.Debbie@epa.gov, and provide a reason for holding samples beyond 60 days

cc: Nardina Turner

Page 2 of 12 E131405 VOA FINAL 04 12 13 0915 4/12/13 9:15



Region 4 Science and Ecosystem Support Division 980 College Station Road, Athens, Georgia 30605-2700 D.A.R.T. Id: 13-0281

Project: 13-0281, Hollingsworth Solderless - Reported by Kristin Trapp

SAMPLES INCLUDED IN THIS REPORT

Project: 13-0281, Hollingsworth Solderless

Sample 1	ID	Laboratory ID	Matrix	Date Collected	Date Received
TB01-041	13	E131405-01	Trip Blank - Water	4/2/13 15:05	4/4/13 8:46
PMW1-04	413	E131405-02	Groundwater	4/2/13 14:15	4/4/13 8:46
PMW3-04	413	E131405-03	Groundwater	4/2/13 12:15	4/4/13 8:46
RW1-041	3	E131405-04	Groundwater	4/2/13 15:01	4/4/13 8:46
RW2-041	3	E131405-05	Groundwater	4/2/13 10:51	4/4/13 8:46
RW2D-04	413	E131405-06	Groundwater	4/2/13 10:51	4/4/13 8:46

Page 3 of 12 E131405 VOA FINAL 04 12 13 0915 4/12/13 9:15



Region 4 Science and Ecosystem Support Division 980 College Station Road, Athens, Georgia 30605-2700 D.A.R.T. Id: 13-0281

Project: 13-0281, Hollingsworth Solderless - Reported by Kristin Trapp

DATA QUALIFIER DEFINITIONS

U The analyte was not detected at or above the reporting limit.

ACRONYMS AND ABBREVIATIONS

vice

Note: Analytes with no known CAS identifiers have been assigned codes beginning with "E", the EPA ID as assigned by the EPA Substance Registry System (www.epa.gov/srs), or beginning with "R4-", a unique identifier assigned by the EPA Region 4 laboratory.

- ISO The test, if analyzed after June 26, 2012, is accredited under the EPA Region 4 ASB's ISO/IEC 17025 accreditation issued by ANSI-ASQ National Accreditation Board/ACLASS. Refer to certificate and scope of accreditation AT-1691.
- MDL Method Detection Limit The minimum concentration of a substance (an analyte) that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero.
- MRL Minimum Reporting Limit Analyte concentration that corresponds to the lowest demonstrated level of acceptable quantitation. The MRL is sample-specific and accounts for preparation weights and volumes, dilutions, and moisture content of soil/sediments.
- TIC Tentatively Identified Compound An analyte identified based on a match with the instrument software's mass spectral library. A calibration standard has not been analyzed to confirm the compound's identification or the estimated concentration reported.

Page 4 of 12 E131405 VOA FINAL 04 12 13 0915 4/12/13 9:15



Region 4 Science and Ecosystem Support Division 980 College Station Road, Athens, Georgia 30605-2700 D.A.R.T. Id: 13-0281

Project: 13-0281, Hollingsworth Solderless - Reported by Kristin Trapp

Volatile Organics

Project: 13-0281, Hollingsworth Solderless

Sample ID: TB01-0413 Lab ID: E131405-01
Station ID: Matrix: Trip Blank - Water

Date Collected: 4/2/13 15:05

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
156-59-2	cis-1,2-Dichloroethene	0.50	U	ug/L	0.50	4/04/13 11:11	4/04/13 16:43	EPA 8260C
79-01-6	Trichloroethene (Trichloroethylene)	0.50	U	ug/L	0.50	4/04/13 11:11	4/04/13 16:43	EPA 8260C
75-01-4	Vinyl chloride	0.50	U	ug/L	0.50	4/04/13 11:11	4/04/13 16:43	EPA 8260C

Page 5 of 12 E131405 VOA FINAL 04 12 13 0915 4/12/13 9:15



Region 4 Science and Ecosystem Support Division 980 College Station Road, Athens, Georgia 30605-2700 D.A.R.T. Id: 13-0281

Project: 13-0281, Hollingsworth Solderless - Reported by Kristin Trapp

Volatile Organics

Project: 13-0281, Hollingsworth Solderless

Sample ID: PMW1-0413 Lab ID: E131405-02
Station ID: PMW-1 Matrix: Groundwater

Date Collected: 4/2/13 14:15

CAS Number	Analyte	Results Qualifiers	Units	MRL	Prepared	Analyzed	Method
156-59-2	cis-1,2-Dichloroethene	7.2	ug/L	0.50	4/04/13 11:11	4/04/13 17:09	EPA 8260C
79-01-6	Trichloroethene (Trichloroethylene)	0.50 U	ug/L	0.50	4/04/13 11:11	4/04/13 17:09	EPA 8260C
75-01-4	Vinyl chloride	6.8	ug/L	0.50	4/04/13 11:11	4/04/13 17:09	EPA 8260C

Page 6 of 12 E131405 VOA FINAL 04 12 13 0915 4/12/13 9:15



Region 4 Science and Ecosystem Support Division 980 College Station Road, Athens, Georgia 30605-2700 D.A.R.T. Id: 13-0281

Project: 13-0281, Hollingsworth Solderless - Reported by Kristin Trapp

Volatile Organics

Project: 13-0281, Hollingsworth Solderless

Sample ID: PMW3-0413 Lab ID: E131405-03
Station ID: PMW-3 Matrix: Groundwater

Date Collected: 4/2/13 12:15

CAS Number	Analyte	Results Qualifiers	Units	MRL	Prepared	Analyzed	Method
156-59-2	cis-1,2-Dichloroethene	2.7	ug/L	0.50	4/04/13 11:11	4/04/13 17:34	EPA 8260C
79-01-6	Trichloroethene (Trichloroethylene)	0.50 U	ug/L	0.50	4/04/13 11:11	4/04/13 17:34	EPA 8260C
75-01-4	Vinyl chloride	4.5	ug/L	0.50	4/04/13 11:11	4/04/13 17:34	EPA 8260C

Page 7 of 12 E131405 VOA FINAL 04 12 13 0915 4/12/13 9:15



Region 4 Science and Ecosystem Support Division 980 College Station Road, Athens, Georgia 30605-2700 D.A.R.T. Id: 13-0281

Project: 13-0281, Hollingsworth Solderless - Reported by Kristin Trapp

Volatile Organics

Project: 13-0281, Hollingsworth Solderless

Sample ID: RW1-0413 Lab ID: E131405-04
Station ID: RW-1 Matrix: Groundwater

Date Collected: 4/2/13 15:01

CAS Number	Analyte	Results Qualifiers	Units	MRL	Prepared	Analyzed	Method
156-59-2	cis-1,2-Dichloroethene	1.0	ug/L	0.50	4/04/13 11:11	4/04/13 17:59	EPA 8260C
79-01-6	Trichloroethene (Trichloroethylene)	0.50 U	ug/L	0.50	4/04/13 11:11	4/04/13 17:59	EPA 8260C
75-01-4	Vinyl chloride	1.3	ug/L	0.50	4/04/13 11:11	4/04/13 17:59	EPA 8260C

Page 8 of 12 E131405 VOA FINAL 04 12 13 0915 4/12/13 9:15



Region 4 Science and Ecosystem Support Division 980 College Station Road, Athens, Georgia 30605-2700 D.A.R.T. Id: 13-0281

Project: 13-0281, Hollingsworth Solderless - Reported by Kristin Trapp

Volatile Organics

Project: 13-0281, Hollingsworth Solderless

Sample ID: RW2-0413 Lab ID: E131405-05
Station ID: RW-2 Matrix: Groundwater

Date Collected: 4/2/13 10:51

CAS Number	Analyte	Results Qualifiers	Units	MRL	Prepared	Analyzed	Method
156-59-2	cis-1,2-Dichloroethene	14	ug/L	0.50	4/04/13 11:11	4/04/13 18:24	EPA 8260C
79-01-6	Trichloroethene (Trichloroethylene)	0.50 U	ug/L	0.50	4/04/13 11:11	4/04/13 18:24	EPA 8260C
75-01-4	Vinyl chloride	48	ug/L	0.50	4/04/13 11:11	4/04/13 18:24	EPA 8260C

Page 9 of 12 E131405 VOA FINAL 04 12 13 0915 4/12/13 9:15



Region 4 Science and Ecosystem Support Division 980 College Station Road, Athens, Georgia 30605-2700 D.A.R.T. Id: 13-0281

Project: 13-0281, Hollingsworth Solderless - Reported by Kristin Trapp

Volatile Organics

Project: 13-0281, Hollingsworth Solderless

Sample ID: RW2D-0413 Lab ID: E131405-06
Station ID: RW-2 Matrix: Groundwater

Date Collected: 4/2/13 10:51

CAS Number	Analyte	Results Qualifiers	Units	MRL	Prepared	Analyzed	Method
156-59-2	cis-1,2-Dichloroethene	15	ug/L	0.50	4/04/13 11:11	4/04/13 18:49	EPA 8260C
79-01-6	Trichloroethene (Trichloroethylene)	0.50 U	ug/L	0.50	4/04/13 11:11	4/04/13 18:49	EPA 8260C
75-01-4	Vinyl chloride	50	ug/L	0.50	4/04/13 11:11	4/04/13 18:49	EPA 8260C

Page 10 of 12 E131405 VOA FINAL 04 12 13 0915 4/12/13 9:15



Region 4 Science and Ecosystem Support Division 980 College Station Road, Athens, Georgia 30605-2700 D.A.R.T. Id: 13-0281

Project: 13-0281, Hollingsworth Solderless - Reported by Kristin Trapp

Volatile Organics (VOA) - Quality Control US-EPA, Region 4, SESD

Spike

Source

Reporting

%REC

RPD

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 1304020 - V 5030B VOA Wtr Pre	ep									
Blank (1304020-BLK2)				Prepared &	Analyzed:	04/04/13				
EPA 8260C										
Vinyl chloride	U	0.50	ug/L							U
cis-1,2-Dichloroethene	U	0.50	"							U
Trichloroethene (Trichloroethylene)	U	0.50	"							Ū
LCS (1304020-BS1)				Prepared &	z Analyzed:	04/04/13				
EPA 8260C										
Vinyl chloride	17.480		ug/L	20.000		87.4	78.8-115			
cis-1,2-Dichloroethene	21.100		"	20.000		106	87.6-115			
Trichloroethene (Trichloroethylene)	19.640		"	20.000		98.2	87.8-114			
MRL Verification (1304020-PS1)				Prepared &	z Analyzed:	04/04/13				
EPA 8260C										
Vinyl chloride	1.8600		ug/L	2.0000		93.0	58.8-135			
cis-1,2-Dichloroethene	1.9800		"	2.0000		99.0	67.6-135			
Trichloroethene (Trichloroethylene)	1.9600		"	2.0000		98.0	67.8-134			

Page 11 of 12 E131405 VOA FINAL 04 12 13 0915 4/12/13 9:15



Region 4 Science and Ecosystem Support Division 980 College Station Road, Athens, Georgia 30605-2700 D.A.R.T. Id: 13-0281

Project: 13-0281, Hollingsworth Solderless - Reported by Kristin Trapp

Notes and Definitions for QC Samples

U The analyte was not detected at or above the reporting limit.

Page 12 of 12 E131405 VOA FINAL 04 12 13 0915 4/12/13 9:15

United States Environmental Protection Agency Region 4

Science and Ecosystem Support Division 980 College Station Road Athens, Georgia 30605-2720



()	M -A1	< 11	1.1.	
PROJECT NAME:	ellergueret,	Dolder	en jeme	rel 1 1
PROJECT LOCATION:	780 57Th	flore	or tt. Land	endale, Fl
PROJECT ID NUMBER:	13-0284	· · · · · · · · · · · · · · · · · · ·	·	
PROJECT LEADER:	Jarro Co	5-11/10		_

FIELD SAMPLING AND MEASUREMENT LOGBOOK

List of personnel in logbook:

Name Jarre Costillo DON Fortson	Initials A	Organization/Duties EPA ,Team Leader ESAT/CAI, Sampling

THIS PAGE LEFT INTENTIONALLY BLANK

Instrument Calibration Log	
Instrument 4 STAR (CHSC) Turbidity, Temperature) SESD ID No 100907-10	Calibrator/s/Init.
Instrument 2100 Q (pH, SC, Turbidit), Temperature) SESD ID No 09 03 10 - 06	_QP
Instrument 4 STAR (6186) Turbidity Temperature) SESD ID No 100907-02	Of
Instrument(pH, SC, Turbidity, Temperature) SESD ID No	
Calibration: Date 14.4.2.1.3 Time 10.5.0.2	
pH 4 Std. Manufacturer: <u>DAKTON</u> Lot# <u>PSID</u> Expiration: <u>8/13</u>	
pH 7 Std. Manufacturer: OAKTON Lot# PQ1C Expiration: 10/13	
pH 10 Std. Manufacturer: <u>OAKJON</u> Lot# <u>PS/A</u> Expiration: <u>\$1/3</u>	
Spec Conductivity Low Std. 1413 µs/cm, Manufacturer Thermo Lot # POIA . Ex	p. <u>12/13</u>
Spec Conductivity High Std µs/cm, Manufacturer Lot # Ex	p
Turbidity Low Std. Manufacturer HACH Lot # AZONG Calibration Due: 3/13	·
Turbidity Mid Std. Manufacturer HACH Lot # A 2074 Calibration Due: 3/13	
Turbidity High Std. Manufacturer HACH Lot # A 2 080 Calibration Due: 3/13	· · · · · ·
NIST: Thermometer: <u>080811 - 0 1</u> Calibration Due: <u>8-16-13</u>	
Pre-calibration readings:	
pH: $4 = \frac{4.12}{7.38} = \frac{3.91}{10}$ Spec. Cond.: $\frac{14.13}{19.42} = \frac{14.51}{19.42} = \frac{14.51}{19.4$	
Turbidity: Low: 10 NTUs = 9.82 NTUs NTUs NTUs NTUs NTUs NTUs NTUs NTUs	
Temperature: NIST = $\frac{21.3}{21.4}$ Deg. C Instrument (specify) $\frac{100907-10}{4-5TAR} = \frac{21.4}{21.4}$	U Deg C
Calibration/verification readings:	
pH: 4 = 4.01 4.01 Spec. Cond.: 1413 µs/cm = 1413 µs/cm 413 ps/cm = $\frac{1413}{2}$ µs/cm = $\frac{1413}{2}$ µs/cm	
$Slope = \frac{-}{97.1} \cdot \frac{7}{97.5}$	
Turbidity: Low: 10 NTUs = 9.82 NTUs Mid: 100 NTUs = 98.8 NTUs DI = 0.09 NTUs = 802 NTUs NTUs $100907-10$	
High: 900 NTUs = 802 NTUs $100907-10$ Temperature: NIST = 21.4 Deg. C Instrument (specify) $\frac{100907-02}{100907-02}$ = 21.6	<u>∕o</u> Deg C
Post-Calibration readings:	
pH: $4 = 3.99 + 0.01$ Spec. Cond.: 1413 µs/cm = 1419 µs/cm 1417 7 = 6.81 7.01	ananamara ahin nguga tananaman ng kin ABUSAN (Titaka
Turbidity: Low: 10 NTUs = 9.96 NTUs $DI = 0.24$	# 13-028/

CALI of PH ON 100907-10 did not pass post check. CAlibrated 100907-02 and wrote results beside cal values for 100907-10.

 $\begin{array}{cccc} \text{Mid:} & 100 & \text{NTUs} = 99.3 \text{ NTUs} \\ \text{High:} & 900 & \text{NTUs} = 810 & \text{NTUs} \end{array}$

Temperature: NIST = 216 Deg. C

Instrument (specify) 100907-02 = 21.7 Deg C

End Check Readings: Date	(12/13-12 2002 2 time - 15	17
--------------------------	----------------------------	----

pH 4 Std. = $\frac{4}{5}$ SUs

pH 7 Std. = 7,04 SUs

pH 10 Std. = 10.00 SUs

Spec Conductivity Low Std. = 1406 µs/cm

Spec Conductivity High Std. = _____ µs/cm

Turbidity Low Std. = 9.79 NTUs

Turbidity Mid Std. = $\frac{97.9}{}$ NTUs

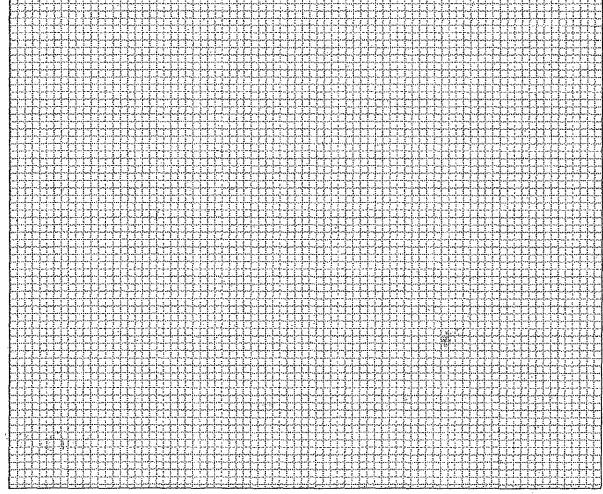
PI= 0.18

Turbidity High Std. = 792 NTUs

NIST Thermometer: 33.2 Deg. C

Instrument 33.3 Deg. C

Notes (Other instruments/calibration standards):



	Instrume	ent Calibratio	n Log		
	ircle applicable measurement I, SC, Turbidity, Temperature)	SESD ID No _	·		Calibrator's Init.
instrument(pF	I, SC, Turbidity, Temperature)	SESD ID No_			
Instrument(pl			. 7		
•	•		. /		
	I, SC, Turbidity, Temperature)	SESD ID No _		•	
Calibration: Date	<u> </u>	ie			
			/		
pH 4 Std. Manufacturer:	Lot#	/	xpiration:		
pH 7 Std. Manufacturer:	Lot#	/E	xpiration:		
pH 10 Std. Manufacturer:	Lot#		xpiration:		
Spec Conductivity Low Std.	μs/cm, Manufactu		Lot #	, Ехр.	· ·
Spec Conductivity High Std.		irer <u>·</u>	Lot #	, Exp.	
Turbidity Low Std. Manufacture	erLot#	<u></u> (Calibration Due:	<u></u>	
Turbidity Mid Std. Manufacture			Calibration Due:		·
Turbidity High Std. Manufactur	erLbt#		Calibration Due:		
NIST Thermometer:	Calibrat	ion Due:		<u> </u>	
Pre-calibration readings pH: 4 = 7 =	Spec. Cond./	µs/cm =			
10 = N' Turbidity: Low: N' Mid: N' High: N	TUs = NTUs		4	1-02°	.13
Temperature: NIST =	Deg. C Instrumen	t (specify)	· · · · · · · · · · · ·	=	Deg C
Calibration/verification reading					
pH: 4 = 7 = 10 = Slope =	Spec. Cond.:	_ µs/cm = _ µs/cm =	hs/cm		•
Nd:N	TUs = NTUs TUs = NTUs TUs = NTUs				
Temperature: NIST =	Deg. C Instrumen	t (specify)		=	Deg C
Post-calibration readings:					
pH: 4 = 7 = 10 =	Spec. Cond.:	_ µs/cm = _ µs/cm =	µs/cm µs/cm		
Turbidity: Low:N	TUs = NTUs		•		

Mid:1	VTUs =	NTUs			
High:	N1Us =	NTUs			
Temperature: NIST =	Deg. C	Instrument (specif	y)	=	_ Deg C
•					
				/.	
End Check Readings: 💯 👍 Da	te	er versioner in der ver	ime		
		22502	427.7	-	ACCUSED STANDARD STANDARDS STANDARDS
					•
pH 4 Std. = Sl	ادs				•
pH 7 Std. =SL	Js		. /		
pH 10 Std. =S		•	· /		•
Spec Conductivity Low Std. =		slem	/	, ,	
Spec Conductivity High Std. =					
		·	. /1		
Turbidity Low Std. =		•	· /	Λ	
Turbidity Mid Std. =			/	// ,	
Turbidity High Std. =				JES .	
NIST Thermometer:	Deg. C Inst	rument Deg	·c /	// - U :	_
Notes (Other instruments/calil	bration standard	s):	,	74-07	-13
	·	<i>'</i>	E.C. S.		
		########			
	1111111				
		17/11/11/11			
		111111111			
	11111111				
	44444				

į

13 W2/13	
Date: Y-2-201 Station ID: RW2 Sample ID: RW2-0405	
Sample Team: Castillo or Init	
The French of Contract	
or Init	
GPS Coordinates: Latitude: 26.19839 N Longitude 080.15250 W	
Garmin [] Serial Number 073108-10 Accuracy 181 feet Trimble [] SESD Instrument #: Logged? Logged? 181 feet	
File name and back-up location (laptop, thumb drive, etc.)	-
Description of sample location:	
Southeast parties of Building anticle	-
SESD Operating Procedures: Check, as appropriate	
Measurement Procedures: 2. / C	
SESDPROC-100-RZ, Field pH Measurement [/	
SESDPROC-101-R2, Field Specific Conductance Measurement []	
SESDPROC-102-R2, Field Temperature Measurement [// SESDPROC-103-R2, Field Turbidity Measurement [//	
SESDPROC-110-R2, Global Positioning System []	
Environmental/Waste Sampling Procedures:	
SESDPROC-305-Rei Potable Water Supply Sampling []	
SESDPROC-301-R2/Groundwater Sampling [] SESDPROC-513-R9, Pore Water Sampling []	
Other Procedures, if applicable:	
In screened Interval parging and Sangling	
Specific Sampling Procedure/Method Used (including equipment ID, as appropriate):	
VOA songling, Geo Pung tetton tubing pheed 2 doft in screeneda	rea
Description of Media/Sample:	
Grandwater Dark oval 600	
Other pertinent information (weather conditions, etc.):	
Suggest Char 85°F	
Filtered Sample: Yes or No If yes, Filter Type: um (size)	
Field Split: (Yes or No) Split Sample ID, Date and Time: RWZD-04/3 10.51	
Well Diameter: C/ in. Calculations:	
Well Depth 10-38 36 ft for (Screen)	
Water Level 3.18 ft 4-02-20 B	
Water Column ft	•
Purge Volume: 455 gallons (Low-Many)	
(Continued on next page)	

1.3-0741 1 of 10

Continuation of so	ammle R1	NZ-04/3	3 .		-	
				1/21000	Z	
pH / Con					1	٠
			,		,	
NOTE: Key to in in separate instru			ımetit calibrat	ion and field distrib	oution information	on maintained
		e Parameters	(continue	on grid below.	if necessary)
1 11me i	•	pec. Cond. µmhos/cm)	Temp (° Cent.)	Turbididty (NTUs)		Notes
- C-	(- a a		757.7	100	Pump On	- A
10:10 6	74	765 2	28,2	79.2 39.2	0.75	gay
1005 6	75	266:2	28.3	35.4	2.25	Gala
10:30	75	2-65-8	28.2	34.4	3.25	gal
10:43 6	75	765.8 2000	35/2	78.8	<u> </u>	gal y -
10:47	(77	266.7	28.5	28.5	4.55	GJah
					end	
1751	are a second	of all ordinates		See the order of the section	Sample Col	lection Time
10.51					10:51	ection Time
* *						
Laboratory Analy	yses and con	tainers (continue	on grid below,	if necessary):		-
Laboratory Analyse		Container 7	9	if necessary): mber of Containers		Preservation
<u></u>		12	9	94 55 		Preservation
<u></u>		Container	9	94 55 		Preservation
Analyse 1/O A	es	Container	9	94 55 		Preservation Q
Analyse 1/O A		Container	9	94 55 		Preservation Q
Analyse 1/O A	es	Container 7 10 1/10 1 <	Type Nu	mber of Containers) NO1	
Analyse 1/O A	in a state of the	Container 7 10 1/10 1 <	Type Nu	94 55) NO1	
Analyse 1/0 A		Container 1	Samples place	mber of Containers) NO1	
Analyse 1/O A MS/MSD? Y or Grid for sketc	h, continu	Container 7 10 1/10 1/2 1/2 1/2 All ations, photo	samples place	mber of Containers (3 for Duft)	ecked for ice/w	ater
Analyse 1/O A MS/MSD? Y or Grid for sketc	h, continu	Container 7 10 1/10 1/2 1/2 1/2 All ations, photo	samples place	mber of Containers (3 for Duft)	ecked for ice/w	ater
Analyse 1/O A MS/MSD? Y or Grid for sketc	h, continu	Container 7 10 1/10 1/2 1/2 1/2 All ations, photo	samples place	mber of Containers (3 for Duft)	ecked for ice/w	
Analyse 1/O A MS/MSD? Y or Grid for sketc	h, continu	Container 7 10 1/10 1/2 1/2 1/2 All ations, photo	samples place	mber of Containers (3 for Duft)	ecked for ice/w	ater
Analyse 1/O A MS/MSD? Y or Grid for sketc	h, continu	Container 7 10 1/10 1/2 1/2 1/2 All ations, photo	samples place	mber of Containers (3 for Duft)	ecked for ice/w	ater
Analyse 1/O A MS/MSD? Y or Grid for sketc	h, continu	Container 7 10 1/10 1/2 1/2 1/2 All ations, photo	samples place	mber of Containers (3 for Duft)	ecked for ice/w	ater
Analyse 1/O A MS/MSD? Y or Grid for sketc	h, continu	Container 7 10 1/10 1/2 1/2 1/2 1/2 All ations, photo	samples place	mber of Containers (3 for Duft)	ecked for ice/w	ater

13-0281 20f10

	Date: 4/07 potstation ID: PMW3 Sample ID: PMW3-04613
	Sample Team: or Init
	Dow forstow or Init.
	or Init.
()	GPS Coordinates: Latitude: 11 26.19 = 39 N Longitude N Co. 15250 W
Ų	Garmin [Serial Number 73/08-10 Accuracy 15 feet
	Trimble [] SESD Instrument #: Logged? Y or N
	File name and back-up location (laptop, thumb drive, etc.)
	Description of sample location:
	Southment portion of the main building outside parking men
	SESD Operating Procedures: Check, as appropriate
	Measurement Procedures:
	SESDPROC-101-R2 Field pH Measurement [// SESDPROC-101-R2 Field Specific Conductance Measurement [//
	SESDPROC-102-RZ-Field Temperature Measurement [/]
	SESDPROC-103-R2, Tield Turbidity Measurement [/] SESDPROC-110-R2, Global Positioning System [/]
	S. S
	Environmental/Waste Sampling Procedures: SESDPROC-305-BAPOtable Water Supply Sampling []
	SESDPROC-301-BZJGroundwater Sampling
	SESDPROC-513-Ro, Pore Water Sampling []
	Other Procedures, if applicable:
	to Screened return auroping and Scorpling (a) 20pl)
	Specific Sampling Procedure/Method Used (including equipment ID, as appropriate)
	Geo Pring, toffen tuting, tubing laced tog casing at doff be in screen
	Description of Media/Sample:
	Grandmaty, mang Dank Color (Park A4 Der) 9-00-03
	Other pertinent information (weather conditions, etc.):
	Sunny Clar 85+
	Filtered Sample: Yes or No If yes, Filter Type:,um (size)
	ELISTE V AC CIPICINI I ID D. 175
	Field Split: Yes or No Split Sample ID, Date and Time:
	Well Diameter: in. Calculations: Well Depth 30 ft
	Water Level 4 0 ft
	Water Column ft Privace Volumes 7 7 5 galloris () - 2 / / /)
	Purge Volume: 2.75 gallons (LOW)
	(Continued on next page)

13-028/

						· e	
Continuation	of sample_	PMW 3-04	4/3				
Instrument N	los (i.e., #1, #	2,#3, etc): Of 10 A	14 Sta	ir/2100	Q		
pH	Conductivit	y Temperat	ure 🗸	Turbidity			
			ument calib	ration and field distril	oution informati	on maintained	
in separate in		ibration logbook.			•		
				ue on grid below	, ii necessary	Y)	
Time	pH (S.U.s)	Spec. Cond. (µmhos/cm)	Temp	1		Notes	•
					Pump On	. 1	
11:30	6.10	236.5	78.6	73.4	0.25	garli	
11:35	6.07	238.7	28,7	7 694	0.50	dal	
11:41	6.06	239.9	28.7	5 7/09	0.75	Sout	
11:46	6.06	242.6	28.5	8 63.2	1.059	roll	
11:53	6.06	245.2	28.7	59.1	1,50%		
12,00	6.07	247.7	1 28.6	596	2.00 6	20 lg	
12:07	6.07	7488	1.25.7	50.9	1.5	gol	
12:10	6.07	750.0	258.	7 50.7	2.75	gat	
1	1 1		l .				
13215	APPENDING TO					llection Time	<u>_</u>
12:15					Sample Col	lection Time	
	analyses and	containers (continue	on grid beld	ow if necessary):		. ,	
	anaiyses and	containers (continue	on grid belo	ow, if necessary):	Sample Col	. ,	
Laboratory A	alyses	Container '	Туре	ow, if necessary): Number of Containers	Sample Col	. ,	
Laboratory A	<u> </u>	· .	Туре		Sample Col	PM	
Laboratory A	alyses	Container '	Туре	Number of Containers	Sample Col	PM	
Laboratory A	alyses	Container '	Туре	Number of Containers	Sample Col	PM	
Laboratory A	alyses	Container '	Туре	Number of Containers	Sample Col	PM	
Laboratory A	alyses	Container '	Туре	Number of Containers	Sample Col	PM	
Laboratory A	alyses	Container '	Туре	Number of Containers	Sample Col	PM	
Laboratory A	alyses A	Container (10 M)	Type Via/S O ex 4-a-	Number of Containers	Sample Col	PM Preservation PONO	
Laboratory A	alyses A Oor N	Container (10 M)	Type (a) < Cyy-a- samples pla	Number of Containers 6 (3 fac./N=) -13 aced on ice/cooler ch	Sample Col	PM Preservation PONO	
Laboratory A	alyses A Oor N	Container (10 M)	Type (a) < Cyy-a- samples pla	Number of Containers 6 (3 fac./N=) -13 aced on ice/cooler ch	Sample Col	PM Preservation PONO	
Laboratory A	alyses A Oor N	Container (10 M)	Type (a) < Cyy-a- samples pla	Number of Containers 6 (3 fac./N=) -13 aced on ice/cooler ch	Sample Col	PM Preservation PONO	
Laboratory A	alyses A Oor N	Container (10 M)	Type (a) < Cyy-a- samples pla	Number of Containers 6 (3 fac./N=) -13 aced on ice/cooler ch	Sample Col	PM Preservation PONO	The state of the s
Laboratory A	alyses A Oor N	Container (10 M)	Type (a) < cy 4-a- samples pla	Number of Containers 6 (3 fac./N=) -13 aced on ice/cooler ch	Sample Col	PM Preservation PONO	
Laboratory A	alyses A Oor N	Container (10 M)	Type (a) < cy 4-a- samples pla	Number of Containers 6 (3 fac./N=) -13 aced on ice/cooler ch	Sample Col	PM Preservation PONO	The state of the s
Laboratory A	alyses A Oor N	Container (10 M)	Type (a) < cy 4-a- samples pla	Number of Containers 6 (3 fac./N=) -13 aced on ice/cooler ch	Sample Col	PM Preservation PONO	The state of the s
Laboratory A	alyses A Oor N	Container (10 M)	Type (a) < cy 4-a- samples pla	Number of Containers 6 (3 fac./N=) -13 aced on ice/cooler ch	Sample Col	PM Preservation PONO	
Laboratory A	alyses A Oor N	Container (10 M)	Type (a) < cy 4-a- samples pla	Number of Containers 6 (3 fac./N=) -13 aced on ice/cooler ch	Sample Col	PM Preservation PONO	
Laboratory A	alyses A Oor N	Container (10 M)	Type (a) < cy 4-a- samples pla	Number of Containers 6 (3 fac./N=) -13 aced on ice/cooler ch	Sample Col	PM Preservation PONO	

	PMW-1 PMW1-0413
	Date: 19/02 Station ID: PM 100 +12/13 Sample ID: 10000 0402 Df 4/13/13
	Sample Team: Jarro Castillo or Init Now for show or Init
ж	or Init
•	Garmin Serial Number 073108-10 Accuracy 7 feet
	Trimble [] SESD Instrument #: Logged? Y or N
	File name and back-up location (laptop, thumb drive, etc.)
	Description of sample location: Southment portion entande the sulling (hand nell casing) under the
	SESD Operating Procedures: Check, as appropriate
	Measurement Procedures:
	SESDPROC-101-R2, Field pH Measurement []
	Environmental/Waste Sampling Procedures: SESDPROC-305-R4, Potable Water Supply Sampling [] SESDPROC-301-R2, Groundwater Sampling [] SESDPROC-513-R0, Pore Water Sampling []
	Other Procedures, if applicable:
	Specific Sampling Procedure/Method Used (including equipment 10, as appropriate):
	Geo Pump 575732 He Flow tubing thing place 200 m screened are
	Description of Media/Sample: 6 ranked water orange, Anher Dark Color
	Other pertinent information (weather conditions, etc.):
	Clear, Suny, 87°f
	Filtered Sample: Yes or No If yes, Filter Type:,um (size)
	Field Split: Yes or Split Sample ID, Date and Time:
	Well Diameter: in. Calculations:
	Well Depth 3 6 ft
	Water Level 4.02 ft
	Water Columnft
	Purge Volume: 3,75 gallons (Low Level flow funging)
	(Continued on next page)

13-008) Sef 10

					,								
	Continuation		7	BMW1-	0413	<u> </u>	4/2/13						
	Continuation	of sample		2 MWO /	040	J. 100				~ A	013		
سر	Instrument N pH O 0 90 NOTE: Key in separate in	los (i.e., #1, #2	2,#3, e	te): OR 1 0	N 45	itar	/HOO 6	λ ,	04-0)0-0 1			
	pH	Conductivit	у <u>/</u>	Tempera	ature 🗸	Turbid	lity <u>/</u>	for	all 1	ev			
L	10 0 00° NOTE: Key	7つ) to instrumen	t num	bers and inst	rument cal	ibration a	nd field distr	ibution i	v nformat	ion ma	intain	ed	
	in separate in	strument cali	ibratic	on logbook.				·		 _			
ļ	r			Parameter				, if ne	cessar	y) ·	·		:
ļ	Time	pH (S.U.s)	_	ec. Cond. nhos/cm)	Tem		urbididty (NTUs)			Not	es		
}					4 6 7 1 1 2 1			Pum	p On				
	13:35	5.82	<u> 20</u>	<u> 55.3</u>	78	7	67.0	la	75	Ba	7	0.25	apl
	13:43	5.87	<u>: ح</u> ر کو	54.8	25%	6 5	50.9	1	<u>(() :</u> S 0:	II	4 1		
ļ	13:50	5.82	2	545	28.	6	51.1	2	50	gal	, <u> </u>		
	13:55	5.93		<u>56.8</u>	128	<u></u>	SS.0_	<u> </u>	<u>-,75</u>	op	/		
b	14:0/2	5.33	<u>- 1</u>	23 \ A \	75	4	59,5		3, 5	201	¥		
لم	2/11/11			74.5							<i>(</i>)		
~~		13.84		15 <i>U</i>	29	0	SS. 3	3	75	<i></i>			-
}	5007 14.156	26	c) S U	29	Ŏ	55.3	Sam	Q N	de la	on Ti	me	
;	14:15). 84 2B		-5 <i>u</i>	29	O	55,3 Tan		<u>e</u> N ple Co	l llectio	on Ti	me	
?	5-07 14:15 Laboratory A	nalyses and	contai	ners (continu	e on grid b	O elow, if ne	SS, 3 The excessary):	Sam 2: 1 ^C	<u>e</u> N ple Co	l llectio	on Ti	me	
-	14:15 ⁶ Laboratory A	analyses and		Container	Туре		SS, 3 The excessary): r of Containe	e; 1 ^c	e N ple Co 1: 1S	llection			
	14:15 ⁶ Laboratory A	<u> </u>		<u> </u>	Туре		ecessary):	e; 1 ^c	<u>e</u> N ple Co	llection			
	14:15 ⁶ Laboratory A	<u> </u>		Container	Туре		ecessary):	e; 1 ^c	e N ple Co 1: 1S	llection			
	14:15 ⁶ Laboratory A	<u> </u>		Container	Туре		ecessary):	e; 1 ^c	e N ple Co 1: 1S	llection			
	14:15 ⁶ Laboratory A	<u> </u>		Container	Туре		ecessary):	e; 1 ^c	e N ple Co 1: 1S	llection			
	Laboratory A	alyses		Container	Type	Numbe 3	r of Containe	e: 1 ^c	eN ple Co 1: 1S	Hection &			
	14:15 ⁶ Laboratory A	alyses		Container	Type	Numbe 3	ecessary):	e: 1 ^c	eN ple Co 1: 1S	Hection &			
	Laboratory A	alyses	,	Container	Type Ad S (1-2-) Il samples	Numbe 3	r of Containe	e: 1 ^c	eN ple Co 1: 1S	Hection &			
	Laboratory A An An An MS/MSD?	alyses	,	Container	Type Ad S (1-2-) Il samples	Numbe 3	r of Containe	e: 1 ^c	eN ple Co 1: 1S	Hection &			
	Laboratory A An An An MS/MSD?	alyses	,	Container	Type Ad S (1-2-) Il samples	Numbe 3	r of Containe	e: 1 ^c	eN ple Co 1: 1S	Hection &			
	Laboratory A An An An MS/MSD?	alyses	,	Container	Type Ad S (1-2-) Il samples	Numbe 3	r of Containe	e: 1 ^c	eN ple Co 1: 1S	Hection &			
	Laboratory A An An An MS/MSD?	alyses	,	Container	Type Ad S (1-2-) Il samples	Numbe 3	r of Containe	e: 1 ^c	eN ple Co 1: 1S	Hection &			
	Laboratory A An An An MS/MSD?	alyses	,	Container	Type Ad S (1-2-) Il samples	Numbe 3	r of Containe	e: 1 ^c	eN ple Co 1: 1S	Hection &			
	Laboratory A An An An MS/MSD?	alyses	,	Container	Type Ad S (1-2-) Il samples	Numbe 3	r of Containe	e: 1 ^c	eN ple Co 1: 1S	Hection &			
	Laboratory A An An An MS/MSD?	alyses	,	Container	Type Ad S (1-2-) Il samples	Numbe 3	r of Containe	e: 1 ^c	eN ple Co 1: 1S	Hection &			
	Laboratory A An An An MS/MSD?	alyses	,	Container	Type Ad S (1-2-) Il samples	Numbe 3	r of Containe	e: 1 ^c	eN ple Co 1: 1S	Hection &			

13-076) 6 8 10

	AUDI-02-13
	Date: 04/02/38tation ID:
	Sample Team: or Init
	or Init.
"	GPS Coordinates: Latitude: 26.19946 N Longitude 080.15357 W
	Garmin [Serial Number073108-10Accuracy feet
	Trimble [] SESD Instrument #:Logged? Y or N
	File name and back-up location (laptop, thumb drive, etc.)
	Description of sample location: AW! pelsealed in the southnest parties of building outside
	Fish the gate area, between a trailer (slock) and while Van
	Measurement Procedures:
	SESDPROC-100-R2, Field pH Measurement [] dev 4-9-13
	SESDPROC-101-R25Field Specific Conductance Measurement [] Jay 4-3-13 SESDPROC-102-R25Field Temperature Measurement [] Jay 4-3-13
	SESDPROC-103-R2, Field Turbidity Measurement
	SESDPROC-110-R2 ³ Global Positioning System
	Environmental/Waste Sampling Procedures:
	SESDPROC-305-R-Potable Water Supply Sampling [] SESDPROC-301-R2; Groundwater Sampling [] SESDPROC-513-R0 Pore Water Sampling []
	SESDPROC-301-R2: Groundwater Sampling [] SESDPROC-513-R0: Pore Water Sampling [] [cv - 4-3-13]
	Other Procedures, if applicable:
	IN Screened Interval sangle/Low flow flow parging
	Specific Sampling Procedure/Method Used (including equipment ID, as appropriate):
	9la Avalar 5/5732
	Description of Media/Sample:
	Grandmater, over color
	Other pertinent information (weather conditions, etc.):
	Clear Summy 900f
	Filtered Sample: Yes or (No) If yes, Filter Type:,um (size)
•	
	Field Split: Yes or No. Split Sample ID, Date and Time:
	Well Diameter: in. Calculations:
	Well Depth ft
	Water Level 3.6 ft
	Water Columnft
	Purge Volume: gallons
	(Continued on next page)

		1		A - 4- 02	-13
Continuation	of sample	AV, Flora	or Ru	187-046	-13 201910/13
pH <u>&</u>	Conductivit	2,#3, etc): Ok/0 A	ure <u> </u>	arbidity	,
NOTE: Key	107-7 to instrumen) if numbers and instr	unient calibrat	ion and field distril	bution information maintained
		libration logbook.	CHILLIAN CHILLD I MU		Survey Manual Ma
	Pı	urge Parameter:	s (continue	on grid below	, if necessary)
Time		Spec. Cond. (µmhos/cm)			Notes
					Pump On
19:30	6.82	382	349	25.2	0' 25 OR1
14:36	6.89	381	89.0	31.6	O.Th gal
1C/ry1	6.88	384	29.2	756.2	1.25 gal.
14:46	6.89	343	29.2	25.2	150 gal
14:5/2	684	1,383	29.2	28.0	2.50 gal
14.00	L2.57 2/	2 2 2	- m ()	7.6	
(/ · (3)	2786	188 383	3-8,7	_3. Q	2,00 901

402-13

Laboratory Analyses and containers (continue on grid below, if necessary):

Analyses	Container Type	Number of Containers	Preservation	
10.4	40ml Pials	3	NONO	
		<i>X</i>		
·				
	2,			
	1/cx 1-	7-13		
			· · · · · · · · · · · · · · · · · · ·	

MS/MSD? Y or N

[All samples placed on ice/cooler checked for ice/water

Sample Collection Time

Grid for sketch/continuations, photo logs, etc.

		J.,				\square	L	LL.	J	Į.						_		Ĵ.,					Ţ	J.,	L	3.	:ī	L.		j., i	J.	3.			3		A.				I.I.	1.				L			32	i.			Ž		IJ
	ÁÍ,	riber.	lè		+	ξ.,	Ĺ.	o.	À.	21/	D	<u>.</u>	. 4			Z.	٤,	.ļ.,		-7	١.	<	- 2	١	-1	'nŽ.	ď	Æ.		<u>.</u>	_,			a. 💆			Ζ,	4	چ.		A.	no:		Q.		,	ے	L	1.	10	N		E.	16	
i	Œ	4	(.is.)		1:6	ş	41)	14	ŗ.y.	ķ.	Ç	۲÷	F.	۲١	4	بح	Į.	ייו		£Ω	4	ج	4	Α.	. 1		A.,	4	Ų	\sim	-4:	Ð	ij	•	20	и	Į	~	٠ą.	-/	Γ.	P. (: y	r.,	£.	rre,	21	-	м	15.	Ų.	2.	Ζ.,		
177	737	1		Z.	11	-1-	Ž1	7	İï	ri.		Ť	·;·-	; -	4	12		17		••••	4-	1	Ť	1-	Ŀ	7	†-1	- 1	li-	į		~7	•	-		/	-1	==	*	1	7	<i>†</i> -	٠	+-	Ė	'n	-	ŀĠ		•			7	44	-+1
1	ላ)	W	K.	M.		40	75	ď	7	12	11	R	3	7	L	O	V	نہ	¥	4,~	1	M	7	7):	ä,	t	"	۵.	C	j,		O.	1.1	1/	1	۲	ĊΣ	D	57	'nί	7	1.	シ	Ç	٠,٠		7	٠.,	7	٠٠٠٠;		44	~~
	77	2															1	1			1			1				ì				Ž.,				Z	Ĭ.,		~~							- 3				-			Ĭ	77	
	1.1	.1.1		į			L	1.	.1.2	. }	1.3	1.	1.	L.				1_	١١		1			1					1	1.		i.					1.			1.	<u> </u>	1	L.			. 1	1					[_]			
٠	إسار					ļ., (į.,	٠.,٠	ټرا.	nd,	٠			ļ., ,		ļ.,	į	٠.į		٠٠.	÷.,	Ç.	į .	٠į.,	ļ.,	ļ	بُسيَ	 j.		į;		.ļ.,		j			.j		٠,٠,٠,٠	. <u>}</u>		المرأو	ļį.	4	٠.,١	٠.į	إساب	 j.		4.4			٠		
	ئِر-ئِ	4-4			}-	ļ			·	-ļ-	٠			} !	-¦	H	- [-	÷)	٠	-¦		٠.,	4	ļ.,4	<u>į</u>			-ŧ	4	-4	<u>.</u>		-4,.	ļļ	.	. .	-		4		4	.	- <u>‡</u> -	Ļ		4	-4	-÷.		-ļ-	<u>بر</u>	٠.,	إنباب	
		[]				}!-	÷		÷	ŀ-	1	-			·	·	÷	-i	1		٠		-4	-ļ	-		.i5			<u> </u>		··[···			1-	÷	4		··-{		lj-			٠	-	÷			- <u>-</u> -				į.	44	
;	77	77	77		}-	'n	-	7	";	·-;·	7	1		'n	-1	'n		1-	} ";	· •	†"	'n	Ť	1-	}-}	·-j··	1-3	Ť	-j-	1	17	-j-:	1		1-1	-1	·}··	1		•	1	'n	7		ç-1		1-	}-}	;-	†"		1:1	7	Ť	-11
	77	7			-		"			"į"	1					1	7	7			in.	17	7	7.	1	4	,,,,,			111	1	*(***	"	4	77	1	**	~	Ϋ,	7	7	,		7	۲.,	٠.	7	~		÷~í	7	٢٠,	1	77	***
		T				1				1											1		Ţ			1	""		Ž.	!"!	7						3		77					1	n	1	1.			77	7		Τ	173	
	44	.3.2			L.J.,	1.5.	1	<u>.</u>	i	1	1	1.	.ļ	L.		ŧ.,	<u>. i.</u>	.į	?		1			ă.,			: .	Ц.	1.	1	1				1.,		.i		I.		IJ,		<u>, i</u> ,			. 1.	1.				1	1	1	Li]
پ	ware.	rien.		9-(1-	,,,,,	ļ	4	n.,		., <u>.</u> ,.			;	ļ,	40	ţ	٠,٠	Ļ.,	وبر	ļ	i,		<u>.</u> ,	÷.,		ļ.,		ļ.,	برياً. سياياً،	<u>.</u>	٠,	j		ļ.,		}	ļ.,		٠Ļ.				ļ	÷			4	J.,		<u>.</u>			٠.,		
						ļ.Ļ.	+-)	-	÷÷		4-	4.	4-	<u> </u>	-:	ļ.,	<u>۽</u>		1	~ļ	ļ	ļ.,	÷	-{···	 ;	-	ļ)	٠	<u>-</u> -			٠ļ.,	·		 ;		ļ	!	-4-	يا. إ		4	<u> </u>	÷		- .	4	ļ-4			٠٠,٠	4-			
		٠٠٠٠;				'n'n	÷ч			<u>į</u>	ŤŢ		·	····	-j	}- }	·ż	·j···	•		į		<u>-</u> -	÷-			<u>.</u>	ار ۲۰۰۰		m		÷-		~}-	4-		·}··		··•				-	-i	-	-4-		<u>}</u> -			·	-	•••		
77	77	77	}	77		ÌΈ	1-1	5	ÍΤ			1	7-	7	†	'n	į	1-	1-5	·~į	÷٠	; -i	1	-	M	~j~	1 3	ij	·	i-i	·;	†	-ì	<u> </u>	11	7	Ť	7		1		'n	'n	Ť-		- ;-	1	Ť	-;-	Ť"	•	71	÷	77	`:1
***			7		,	""	"	~		٠,٠	-	1) i	٠,٠٠		**	-	ី		4,	7	~	1,-	~	~!~	,,,,,	1		7	~;"			`` <u>i</u> ~	*		Ţ.,	7	nijo.	17	- 3	7	'n	~!~	m	7	11	~;			. د آب		"!"	11	***
						Ţ.,		3.		Τ.			·		7			Ι	13		Ϊ.		Ŀ	T.		·	13	3				T.			Ξ		3		7					7		· ;	17		-;-		```			77	
		.4.4			L.Ļ.	<u>ļ.</u>	ź	<u>.</u>	À		1	 l.	.ļ.	Li.	.i.,	1	.j.,	Ļ.		i	i.	ì.i	<u>i</u> .	į.,	<u></u> ì	.,[_			į	<u></u> :		.i	!	-1.	1.1	1.1	<u>:</u>	Li			1_		<u>L.i.</u>			. i.	1.	L.Ì.	1	! .		1.1			
ļ;	4	nįmį		,		ļ., (.	4	nr,	ļ.,,		ļ.,			ļ,		je.	. .	Ļ.,	١.,	٠	ţ.,		٠.,	4	ļ.,	٠.	ڊ)	ļ.,		ļ.,	Ļļ.	ىب.	ļ.,}	٠	Į.,		ġ.,		<u>į</u>	.iį		٠.			. }			,		<u>.</u>	<u>.</u> į			.i!	[
	-}}	إإ.				ļĻ.	44		į.,.	·-	-}	<u>-</u> -		<u></u>	Ę.,	<u> </u>	٠į.	ţ	١	Į	.ļ.,.	٠.,	£	-į		<u></u>	ļļ	<u>-</u> -	إ			·		,],	ļļ		<u>ځ</u>	i	٠.	4		-	<u></u>		1	٠.٠.	44	L	į	٠	ļ	ļ!	٠	4.4	[
	+-}	-[[4	~[~]		ļ	1	-	-	·-ţ··		7	+	-	÷	H	4.	Ŷ-	-		4		÷	•		·	••••	-		ļ;	₩,		-	··••••	∱~ }	{	÷		٠٠٠	'ní		+-		٠	-	÷	1				wj	1-1	···	÷	[
1	77	17	+	7	7-	17	1-1			7	Ħ	H				H	÷-	-	1-1	7	77	7-3	-i-		1	7	;-;	7	Ţ-,	[-		÷	;	Ţ	1-1		T		*}-	11		7-7	T	•	7-1	7	1-1	Ť	+	•		7-1	-;-	ŤŤ	-11
******	7"				,h.		" "	~i~		Ţ.,	1		7	ŗ::	Ψ.,	,	T		-		•"	7	·•••		~	**		T)		7	T.		~i		11		Ţ.,		Ť		7		••••	*****	~	٠.,١			7	~~	~†∵	-	"i"	14	~~
	L.		7			I.i.	Ш		1.	Τ,			Л.,	Ľ			Ţ	L	1.7		J.,		Ţ	Ľ		ž				()	1	£		1	L	7	1		1	7.	Ξ.			1		· • • • • • • • • • • • • • • • • • • •	П		- [13	7			73	
ننا	ئىنە	<u></u>	: 2				; ;		٠.	<u>.</u>	1	: :		١		1	- 1	1		- 1						- 1	<u>:</u>	4	1	<u>; :</u>		Ĺ		L			1	-	Ľ	ت						Ĺ				- 1			_[فسأد	اتـــ

Date: $\frac{4/2/13}{}$ Station ID: $\frac{\#R4D}{}$	Sample ID:Sample ID:	<u> </u>	
Sample Team:	or Init. <u>JC</u>	- '	
	orInit		-
<u> </u>	or Init	_	•
GPS Coordinates: Latitude:	N Longitude 🕆		w
Garmin [] Serial Number	Ассигасу	feet	•
Trimble [] SESD Instrument #:	Logged? Y	or N	
File name and back-up location (laptop, thu	imb drive, etc.)		
Description of sample location:			·
Trip Blank	: <u> </u>	·	
SESD Operating Procedures: Check, as app	propriate	. •	
Measurement Procedures:	•		÷
		•	
SESDPROC-100-R2, Field pH Mo SESDPROC-101-R2, Field Specif			
SESDPROC-102-R2, Field Tempe	erature Measurement []		
SESDPROC-103-R2, Field Turbic SESDPROC-110-R2, Global Posit			
Environmental/Waste Sampling Procedu SESDPROC-305-R1, Potable Wat			•
SESDPROC-301-R2, Groundwate	er Sampling []		
SESDPROC-513-R0, Pore Water	Sampling []		
Other Procedures, if applicable:	· .		
-NA	<u></u>	<u></u>	
Specific Sampling Procedure/Method Us	sed (including equipment ID, as ap	propriate):	
			_
Description of Media/Sample:		4	
Trip Blank			·
Other pertinent information (weather condition	ons, etc.):		
NA	·		
, ,			
Filtered Sample: Yes or (N) If yes	s, Filter Type:	ـــــــــــــــــــــــــــــــــــــ	um (size)
	•		
Field Split: Yes or No Split Sample	e ID, Date and Time:	· · · · · · · · · · · · · · · · · · ·	
Well Diameter: /in.	Calculations:		•
Well Depth ft			
Water Level ft			
Water Column ft			
Purge Volume: gallons			•
(Continued on next page)			

Continuation	: n of sample	TBO	1-04	13									
	Nos (i.e., #1, #		•							ı			· gar-
pH	Conductivi	ty	Temperati	ure	Turbio	lity							
NOTE: Ke in separate i	y to instrume nstrument ca	nt numbers libration lo	and instra gbook.	ıment cali	bration a	nd field d	listribı	ution inf	ormat	ion m	aintair	ned	-
		urge Par						if nec	essar	<u>y)</u>			
Time	pH (S.U.s)		Cond. os/cm)			urbidid (NTUs)				No	tes		
								Pump	On				
 -	-	-					 -						-
	 	- -											
	+ -						\rightarrow						***
		<u> </u>						<u>-</u>					
				_	-								
5:05		in all references	eri karena	340 160 274 2				Samp	la Ca	Hact	iou T	into	
1/0	nalyses C	1	Container' D _{IN} L V	ials	Numbe	r of Cont	amers		JON:		ervatio	<u> </u>	
											<u> </u>		
· · ·					·			-					
					· ·								
<u>-</u>								<u>. </u>					
AS/MSD?	Y or N		[] All	samples [olaced or	ice/cool	ler che	cked fo	r ice/s	vater			
Grid for s	kẹtch, con	tinuation	s, photo	logs, etc	.						-		•
11111							Tİ						144
					1111								111
		11111				1441							144
		11111				144	圳	钳		11			144
										4			1111
┆ ╍┟╍┟╍┟╍╂╍╂╍╂╍ ╏ ╌┆╌	┊ ╍┩╍╂╍╂╍╂╍╂╍╂		ittt	+++++	111111	tilitt	Thi		ttt	+++			

Date:	Station ID:	Sample ID:		
Sample Team:	•	or Init,		
Sample ream.		orInit.	- 1. 	
		or Init./_	 	
GPS Coordinate		N Longifude		W
		Accuracy		
		Logged		
	ack-up location (laptop, th			
	sample location:	/		
Description of	sumpro totation.		·	
SESD Operation	g Procedures: Check, as ap	opropriate .	_	
Measurement]	Procedures:			
	PROC-100-R2, Field pH N	Measurement [] ific Conductance Measurement	ГЪ	
SESDI	PROC-102-R2, Field Tem	perature Measurement []		
	PROC-103-R2, Field Turb PROC-110-R2, Global Po			
	in the state of th	$\mathcal{L} = \mathcal{L}$	*	
	I/Waste Sampling Proced	lures:/ ater Supply Sampling []		•
SESDI	PROC-301-R2, Groundwa	ter Sampling []		
SESD	PROC-513-R0, Pore Wate	r Sampling []		
Other Procedu	res, if applicable:			
	 			
Specific Sampl	ling Procedure/Method L	Jsed (including equipment ID,	as appropriate):	
		•		
Description of N	/ledia/Sample:	· · · · · · · · · · · · · · · · · · ·		•
		<u> </u>		<u>.</u>
Other pertinent	information (weather condit	tions, etc.):	-	
	1/h	1 0 17		
Filtered Sample	e: Yes or No If v	(1-2-15) res. Filter Type:	•	um (size)
ruteren sampa	e. les / O/ //NO My	es, rmei Type.		um (size)
Field Split: Ye	es or No Split Sam	ole ID, Date and Time:	٠	•
Well Diameter:		Calculations:		
Well Depth	ft		••	
Water Level	ft			
Water Column	•			
Purge Volume:		S		
(Continued on n	-			
American mental file to	ry	· · · · · · · · · · · · · · · · · · ·		

astrument Nos (i.e., #1, #2, #3, etc): H Conductivity Temperature Turbidity (OTE: Key to instrument numbers and instrument calibration and field distribution information maintained a separate instrument calibration logbook. Purge Parameters (continue on grid below, if necessary) Time Spec. Cond. Temp Turbidity Notes ("Cent.) (NTUs) Notes Pump On Sample Collection Time Aboratory Analyses and containers (continue on grid below, if necessary): Analyses Container Type Number of Containers Preservation As/MSD? Y or N 1/All samples placed on ice/cooler checked for ice/water Grid for sketch, continuations, putto logs, etc. \(\frac{1}{2} \) - \(\frac{1}{2} \) - \(\frac{1}{2} \)	Continuation	ı of sample_		· · ·						
Time Parameters (continue on grid below, if necessary) Purge Parameters (continue on grid below, if necessary) Time Spec. Cond. Temp (NTUs) Notes Pump On Sample Collection Time Analyses Container Type Number of Containers Preservation Analyses Container Type Number of Containers Preservation	Instrument	Nos (i.e., #1, #	2,#3, etc):							
Time Purge Parameters (continue on grid below, if necessary) Time Spec. Cond. (g.U.s) (μmhos/cm) (° Cent.) (NTUs) Notes Pump On Sample Collection Time Analyses Container Type Number of Containers Preservation Analyses Container Type Number of Containers Preservation	pH	Conductivit	ty Tempera	ture	furbidity _			/		
Time (S.U.s) (µmhos/cm) (° Cent.) (NTUs) Pump On Sample Collection Time Analyses Container Type Number of Containers Preservation As/MSD? Y or N]_All samples placed on ice/cooler checked for ice/water	NOTE: Key in separate i	to instrumer nstrument ca	nt numbers and instr libration logbook.	rument calibra	ıtion and fiel	ld distrib	ution inform	/ nation mai	intained	
AS/MSD? Y or N							if necess	ary)		
Analyses Container Type Number of Containers Preservation Analyses Container Type Number of Containers Preservation Als/MSD? Y or N Als samples placed on ice/cooler checked for ice/water	Time	. ~ 1						Not	es .	- <u>:</u> -
Analyses Container Type Number of Containers Preservation Analyses Container Type Number of Containers Preservation As/MSD? Y or N 1\textsquare All samples placed on ice/cooler checked for ice/water	<u>·</u>				第124号 图1613	100000000000000000000000000000000000000	Pump O	n ·		
Analyses Container Type Number of Containers Preservation Analyses Container Type Number of Containers Preservation As/MSD? Y or N 1\textsquare All samples placed on ice/cooler checked for ice/water	-	 !	 		 	/	<u> </u>			
Analyses Container (continue on grid below, if necessary): Analyses Container Type Number of Containers Preservation All samples placed on ice/cooler checked for ice/water			 	-	 	-/+				
Analyses Container (continue on grid below, if necessary): Analyses Container Type Number of Containers Preservation IS/MSD? Y or N All samples placed on ice/cooler checked for ice/water	-	 	_		+	7_1				
Analyses and containers (continue on grid below, if necessary): Analyses Container Type Number of Containers Preservation (S/MSD? Y or N] All samples placed on ice/cooler checked for ice/water										
Analyses and containers (continue on grid below, if necessary): Analyses Container Type Number of Containers Preservation (S/MSD? Y or N] All samples placed on ice/cooler checked for ice/water					 			· 		
Analyses Container Type Number of Containers Preservation Analyses Container Type Number of Containers Preservation			ļ		 	· -				
Analyses Container Type Number of Containers Preservation S/MSD? Y or N Analyses Container Type Number of Containers Preservation Analyses Container Type Number of Containers Preservation		+		 	//) -					
Analyses Container Type Number of Containers Preservation Analyses Container Type Number of Containers Preservation							Sample (Collectio	n Time	
				-	·			-		
										<u> </u>
	· .						<u></u>			
							ecked for ic	e/water		
						Thir				
					11111					11
	HHH					1111				
						1111		1111		11
										111
					11111	1111		1111		圳
										11
				diili	1444					111
	llihi							. 1 1 1 9 9 9	111111	اسلسلسل
անանահանանական անականական անական արևանան անանական անական անական անական անական անական հայտական անական անական անական հայտական անական հայտական անական հայտական անական հայտական հայ	444444					1111				111

END OF REPORT